

Appl. No : 10/697,745
Amdt. dated : 07/11/05
Reply to Office Action of 06/03/05

REMARKS/ARGUMENTS

The Examiner's final Restriction Request is acknowledged and non-elected claims 35-64 have been canceled. A divisional application will be filed at a later date.

Examiner Luan C. Thai is thanked for thoroughly reviewing the subject application.

Examiner is also thanked for allowing claims 9, 10, 12, 14, 17, 21-23, 25, 27, 30 and 34 and for the indication of allowing claims 11, 13, 15, 16, 18-20, 24, 26, 28- 29 and 31-33 if these claims are rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, as set for the in this Office Action.

Favorable reconsideration of this application in light of the above amendments and the following remarks is respectfully requested. All claims are believed to be in condition for allowance.

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Claim Rejections - 35 U.S.C. § 112

Reconsideration of the rejection of claims 3, 5, 7, 8, 11, 13, 15, 16, 18-20, 24, 26, 28- 29 and 31-33 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is respectfully requested based on the following.

Claims 3, 5, 7, 8, 11, 13, 15, 16, 18-20, 24, 26, 28- 29 and 31-33 have been amended with the addition of the statement "selected from the group consisting of", as kindly suggested by Examiner.

In light of the foregoing response, applicant respectfully requests that the Examiner's rejection of claims 3, 5, 7, 8, 11, 13, 15, 16, 18-20, 24, 26, 28- 29 and 31-33 under 35 U.S.C. 112, second paragraph, be withdrawn.

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Claim Rejections - 35 U.S.C. § 102

Reconsideration of the rejection of claims 1-8 under 35 U.S.C. 102(e) as being anticipated by Morrow (6,872,666) is respectfully requested based on the following.

Both the Morrow and the Wang et al. inventions, as cited by Examiner, are basically different from the claimed invention since both these inventions use patterned layers of photoresist to create patterns of interconnect lines, in both cases more specifically damascene interconnects.

The use of photoresist masks by the Morrow and Wang et al. inventions is implied by the cross section of Fig. 1a of Morrow, used for the patterning of layers 108/109, and is further confirmed by the creation of the patterned second layer 130 of photoresist shown in Fig. 1c. of Morrow. (see text col. 4, lines 36 e.a.).

Wang et al. provides for a first patterned layer 28 of photoresist, see Fig. 3, see text col. 7, lines 23 e.a.

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Further, see Wang et al. Fig. 7, layer 34, which is a second patterned layer of photoresist, as confirmed in the text col. 8, lines 59 e.a.

This use of patterned layers of photoresist makes the Morrow and Wang et al. inventions fundamentally different from the claimed invention. This can be highlighted by quoting amended claim 1, which specifies the method for creation of an interconnect pattern of the claimed invention, and underlining in this quote the differences between the claimed invention and the cited prior art, as follows:

- providing a layer of conductive material over a semiconductor surface, a layer of Anti Reflective Coating (ARC) having been deposited over the layer of conductive material
- depositing a layer of Photo-Active Dielectric (PAD) over the layer of ARC
- applying a direct patterned exposure to the layer of PAD, said direct patterned exposure comprising a patterned exposure without interposition of a patterned layer of photoresist serving as a photoresist mask between a source of exposure energy and the exposed layer of PAD, thereby

patterning the layer of PAD, creating an interconnect pattern therein, exposing the layer of ARC

- removing the exposed ARC, and
- filling the interconnect pattern with a conductive material.

By providing the above quoted method of creation of an interconnect pattern, the claimed invention provides for the following specific advantages, in contrast with the Morrow and the Wang et al. inventions, which do not provide these advantages in creating interconnect lines, making the claimed invention patentable over the Morrow and the Wang et al. invention, as follows:

1. to provide a method of creating interconnect patterns that does not require the creation of an overlying photoresist exposure mask
2. to reduce the cost of creating an interconnect pattern in a layer of dielectric
3. to significantly reduce the materials required for the creation of an interconnect pattern, and

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4. to provide a method for the creation of an interconnect pattern that is particularly suited to the use of a low-w dielectric as insulating material.

In light of the foregoing response, applicant respectfully requests Examiner's rejection of claims 1-8 under 35 U.S.C. 102(e), as being anticipated by Morrow (6,872,666), be withdrawn.

Other Considerations

No new independent or dependent claims have been written as a result of this office action, no new charges are therefore incurred due to this office action.

It is requested that, should Examiner not find the claims to be allowable, to call the undersigned Attorney at the Examiner's convenience at 845-452-5863 in order to overcome any problems preventing allowance of the claims.

Respectfully submitted,



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